



APPENDIX 1  
Computer Programs

RECEIVED  
DEC 24 2002  
TECH CENTER 1600/2900

**BUILD FALSE**

```
#!/usr/leo/bin/perl
```

```
if (scalar @ARGV <4) { die "Need Pool, Seq, #False positives, #False negatives\n"; }
```

```
$FalsePos=$ARGV[2];  
$FalseNeg=$ARGV[3];  
open(POOL,$ARGV[0]);  
print "Using pool $ARGV[0]\n";  
$pools=0;  
while(<POOL>)  
{  
    last if (/TotCost/);  
    chop $_;  
    @Probes=split(/[: ]/, $_);  
    shift @Probes;  
    shift @Probes;  
    shift @Probes;  
    if (scalar @Probes > 0)  
    {  
        @{$Pool[$pools]}=@Probes;  
        foreach $probe (@Probes)  
        {  
            $PoolInd{$probe}=$pools;  
        }  
        $pools++;  
    }  
}
```

```
print "Using sequence $ARGV[1]\n";  
open(SEQ,$ARGV[1]);  
$Seq="";  
while (<SEQ>)  
{  
    chop $_;  
    $Seq .= uc($_);  
}
```

```
$Found=0;  
undef(%Mers);  
undef(@Solutions);  
undef(%On);  
foreach $i(0..length($Seq)-10)
```

```

{
    $fprobe=substr($Seq,$i,5);
    $lprobe=substr($Seq,$i+5,5);
    $pool=$PoolInd{$lprobe};
    $On{$fprobe}{$pool}=1;
}
foreach $prb (keys %On)
{
    foreach $pool (keys %{$On{$prb}})
    {
        print "True Signal: fp=$prb pool=$pool\n";
        push @Signals, new_signal($prb,$pool);
    }
}
$NumOn=scalar @Signals;

@char = qw( A C G T );
foreach $1(@char) {
    foreach $2(@char) {
        foreach $3(@char) {
            foreach $4(@char) {
                foreach $5(@char) {
                    push @Probes, $1.$2.$3.$4.$5;
                }
            }
        }
    }
}
foreach $i (1..$FalsePos)
{
    $pool = int(rand($pools));
    $fixed = $Probes[rand(1024)];
    $On{$fixed}{$pool}=1;
    print "False positive Signal: fp=$fixed pool=$pool\n";
}

foreach $i (0..$FalseNeg-1)
{
    $tmpSignal=$Signals[$i];
    $randPos = $i + int($NumOn);
    $$Signal=$Signals[$randPos];
    $Signals[$i]=$Signal;
    $Signals[$randPos]=$tmpSignal;
    $On{$Signal->[0]}{$Signal->[1]}=0;
    print "False negative : fp=$Signal->[0] pool=$Signal->[1]\n";
    $NumOn--;
}
foreach $prb (keys %On)
{
    foreach $pool (keys %{$On{$prb}})
    {

```

```

        if ($On{$prb}{$pool}==1)
        {
            foreach $probeInPool (@{$Pool[$pool]})
            {
                $Mers{$prb.$probeInPool}=1;
            }
        }
    }
}
print STDERR "10mers:", scalar (keys %Mers),"n";
print "10mers:", scalar (keys %Mers),"n";
$overlap=2;
foreach $mer (keys %Mers)
{
    foreach $o (1..$overlap)
    {
        $Prefix[$o]{substr($mer,0,length($mer)-$overlap)}.=
            substr($mer,length($mer)-$overlap,$o)." ";
        $Postfix[$o]{substr($mer,$overlap,length($mer)-$overlap)}.=
            substr($mer,$o-1,$overlap+1-$o)." ";
    }
}
undef(%Pre);
undef(%Post);
foreach $mer (keys %Mers)
{
    $Pre{substr($mer,0,length($mer)-1)}.=substr($mer,length($mer)-1,1);
    $Post{substr($mer,1,length($mer)-1)}.=substr($mer,0,1);
}
undef(%Mers);
foreach $submer (keys %Post)
{
    @chars=split(/,$Pre{$submer});
    @Chars=split(/,$Post{$submer});
    foreach $ch (@chars)
    {
        foreach $Ch (@Chars)
        {
            $Mers{$Ch.$submer.$ch}=1;
        }
    }
}
foreach $o (1..$overlap)
{
    foreach $submer (keys %{$Postfix[$o]})
    {
        @chars=split(/,$Prefix[$o]{$submer});
    }
}

```

```

        @Chars=split(/ /,$Postfix{$o}{$submer});
        foreach $ch (@chars)
        {
            foreach $Ch (@Chars)
            {
                $Mers{$Ch.$submer.$ch}=1;
            }
        }
    }
}
foreach $i (0..length($Seq)-11)
{
    $mer = substr($Seq,$i,11);
    if (!$Mers{$mer})
    {
        print STDERR $mer, " not found!\n";
        exit(1);
    }
}

print STDERR "11mers:", scalar (keys %Mers),"n";
print "11mers:", scalar (keys %Mers),"n";
foreach $lenMer (12..length($Seq))
{
    undef(%Prefix);
    undef(%Postfix);
    foreach $mer (keys %Mers)
    {
        $Prefix {substr($mer,0,length($mer)-1)}.=substr($mer,length($mer)-1,1);
        $Postfix {substr($mer,1,length($mer)-1)}.=substr($mer,0,1);
    }
    undef(%Mers);
    foreach $submer (keys %Postfix)
    {
        @chars=split(/ /,$Prefix {$submer});
        @Chars=split(/ /,$Postfix {$submer});
        foreach $ch (@chars)
        {
            foreach $Ch (@Chars)
            {
                $Mers{$Ch.$submer.$ch}=1;
            }
        }
    }
}
print STDERR $lenMer,"mers:", scalar (keys %Mers),"n";
print $lenMer,"mers:", scalar (keys %Mers),"n";
if (($lenMer%50 == 0) && (scalar (keys %Mers) > 4000))

```

```

{
    print STDERR "Cleaning...";
    $Cleaned=0;
    foreach $seq (keys %Mers)
    {
        undef(%testOn);
        foreach $i(0..length($seq)-10)
        {
            $fprobe=substr($seq,$i,5);
            $pool=$PoolInd{substr($seq,$i+5,5)};
            $testOn{$fprobe}{$pool}=1; #To see if all are fully
represented
        }
        $NumtestOn=0;
        foreach $prb (keys %testOn) { $NumtestOn += scalar (keys
%{$testOn{$prb}}); }
        if ($NumtestOn<($lenMer-15))
        {
            $Cleaned++;
            delete $Mers{$seq};
        }
    }
    print STDERR "$Cleaned cleaned out.\n";
}

print STDERR "Checking all ",scalar (keys %Mers), " solutions for full dot-representation...";
print OUT "#Growths: ", scalar (keys %Mers)," ";

NEXT:foreach $seq (keys %Mers)
{
    undef(%testOn);
    foreach $i(0..length($seq)-10)
    {
        $fprobe=substr($seq,$i,5);
        $pool=$PoolInd{substr($seq,$i+5,5)};
        $testOn{$fprobe}{$pool}=1; #To see if all are fully represented
    }
    $NumtestOn=0;
    foreach $prb (keys %testOn) { $NumtestOn += scalar (keys %{$testOn{$prb}}); }
    if ($seq eq $Seq)
    {
        $Found=1;
        $seq .= " True solution ";
    }
    if ($NumtestOn>=$NumOn)
    {
        push @Solutions, $seq;
    }
}

```

```

        print "$seq DotsOn=$NumtestOn\n\n";
    }
}
print STDERR "done.\n",scalar @Solutions, " consistent solutions found";
if ($Found)
{
    print STDERR " including the true one.";
}
else {
    print STDERR " - TRUE not FOUND!!!";
}
print "Solutions: ",scalar @Solutions," ";

sub new_signal
{
    my ($fp,$pool)=@_;
    my @Signal = ($fp,$pool);
    return \@Signal;
}

```

## BuildMMult

```
#!/usr/leo/bin/perl
```

```
if (scalar @ARGV <4) { die "Need Pool, Seq, #False positives, #False negatives\n"; }
```

```
$FalsePos=$ARGV[2];
$FalseNeg=$ARGV[3];
open(POOL,$ARGV[0]);
print "Using pool $ARGV[0]\n";
$pools=0;
while(<POOL>)
{
    last if (/TotCost/);
    chop $_;
    @Probes=split(/[: ]/, $_);
    shift @Probes;
    shift @Probes;
    shift @Probes;
    if (scalar @Probes > 0)
    {
        @{$Pool[$pools]}=@Probes;
        foreach $probe (@Probes)
        {
            $PoolInd{$probe}=$pools;
        }
        $pools++;
    }
}
```

```
print "Using sequence $ARGV[1]\n";
open(SEQ,$ARGV[1]);
$Seq="";
while (<SEQ>)
{
    chop $_;
    $Seq .= uc($_);
}
```

```
$Found=0;
undef(%Mers);
undef(@Solutions);
undef(%On);
foreach $i(0..length($Seq)-10)
{
    $fprobe=substr($Seq,$i,5);
    $lprobe=substr($Seq,$i+5,5);
```

```

    $pool=$PoolInd{$lprobe};
    $On{$fprobe}{$pool}=1;
}
foreach $prb (keys %On)
{
    foreach $pool (keys %{$On{$prb}})
    {
        print "True Signal: fp=$prb pool=$pool\n";
        push @Signals, new_signal($prb,$pool);
    }
}
$NumOn=scalar @Signals;

@char = qw( A C G T );
foreach $l(@char) {
    foreach $f(@char) {
        foreach $p(@char) {
            foreach $d(@char) {
                foreach $s(@char) {
                    push @Probes, $l.$f.$p.$d.$s;
                }
            }
        }
    }
}
foreach $i (1..$FalsePos)
{
    $pool = int(rand($pools));
    $fixed = $Probes[rand(1024)];
    $On{$fixed}{$pool}=1;
    print "False positive Signal: fp=$fixed pool=$pool\n";
}

foreach $i (0..$FalseNeg-1)
{
    $tmpSignal=$Signals[$i];
    $randPos = $i + int($NumOn);
    $$Signal=$Signals[$randPos];
    $Signals[$i]=$Signal;
    $Signals[$randPos]=$tmpSignal;
    $On{$Signal->[0]}{$Signal->[1]}=0;
    print "False negative : fp=$Signal->[0] pool=$Signal->[1]\n";
    $NumOn--;
}
foreach $prb (keys %On)
{
    foreach $pool (keys %{$On{$prb}})
    {
        if ($On{$prb}{$pool}==1)
        {
            foreach $probeInPool (@{$Pool[$pool]})

```



```

        {
            $Mers{$Sprb.$probeInPool}=1;
        }
    }
}
print STDERR "10mers:", scalar (keys %Mers),"\\n";
print "10mers:", scalar (keys %Mers),"\\n";
#Soverlap=2;
#foreach $mer (keys %Mers)
#{
#    foreach $o (1..Soverlap)
#    {
#        $Prefix[$o]{substr($mer,0,length($mer)-$soverlap)}.=
#            substr($mer,length($mer)-$soverlap,$o)." ";
#        $Postfix[$o]{substr($mer,$soverlap,length($mer)-$soverlap)}.=
#            substr($mer,$o-1,$soverlap+1-$o)." ";
#    }
#}
undef(%Pre);
undef(%Post);
foreach $mer (keys %Mers)
{
    $Pre{substr($mer,0,length($mer)-1)}.=substr($mer,length($mer)-1,1);
    $Post{substr($mer,1,length($mer)-1)}.=substr($mer,0,1);
}
undef(%Mers);
foreach $submer (keys %Post)
{
    @chars=split(/,$Pre{$submer});
    @Chars=split(/,$Post{$submer});
    foreach $ch (@chars)
    {
        foreach $Ch (@Chars)
        {
            $Mers{$Ch.$submer.$ch}=1;
        }
    }
}
#foreach $o (1..Soverlap)
#{
#    foreach $submer (keys %{$Postfix[$o]})
#    {
#        @chars=split(/,$Prefix[$o]{$submer});
#        @Chars=split(/,$Postfix[$o]{$submer});
#        foreach $ch (@chars)
#        {

```

```

#           foreach $Ch (@Chars)
#           {
#               $Mers{$Ch.$submer.$ch}=1;
#           }
#       }
#   }
#}
foreach $i (0..length($Seq)-11)
{
    $mer = substr($Seq,$i,11);
    if (!$Mers{$mer})
    {
        print STDERR $mer, " not found!\n";
        exit(1);
    }
}

print STDERR "11mers:", scalar (keys %Mers),"n";
print "11mers:", scalar (keys %Mers),"n";
foreach $lenMer (12..length($Seq))
{
    undef(%Prefix);
    undef(%Postfix);
    foreach $mer (keys %Mers)
    {
        $Prefix {substr($mer,0,length($mer)-1)}.=substr($mer,length($mer)-1,1);
        $Postfix {substr($mer,1,length($mer)-1)}.=substr($mer,0,1);
    }
    undef(%Mers);
    foreach $submer (keys %Postfix)
    {
        @chars=split(//,$Prefix {$submer});
        @Chars=split(//,$Postfix {$submer});
        foreach $ch (@chars)
        {
            foreach $Ch (@Chars)
            {
                $Mers{$Ch.$submer.$ch}=1;
            }
        }
    }
    print STDERR $lenMer,"mers:", scalar (keys %Mers),"n";
    print $lenMer,"mers:", scalar (keys %Mers),"n";
    if (($lenMer%50 == 0) && (scalar (keys %Mers) > 4000))
    {
        print STDERR "Cleaning...";
        $Cleaned=0;
    }
}

```

```

        foreach $seq (keys %Mers)
        {
            undef(%testOn);
            foreach $i(0..length($seq)-10)
            {
                $fprobe=substr($seq,$i,5);
                $pool=$PoolInd{substr($seq,$i+5,5)};
                $testOn{$fprobe}{$pool}=1; #To see if all are fully
represented
            }
            $NumtestOn=0;
            foreach $prb (keys %testOn) { $NumtestOn += scalar (keys
%{$testOn{$prb}}); }
            if ($NumtestOn<($lenMer-15))
            {
                $Cleaned++;
                delete $Mers{$seq};
            }
        }
        print STDERR "$Cleaned cleaned out.\n";
    }
}
print STDERR "Checking all ",scalar (keys %Mers), " solutions for full dot-representation...";
print OUT "#Growths: ", scalar (keys %Mers)," ";

NEXT:foreach $seq (keys %Mers)
{
    undef(%testOn);
    foreach $i(0..length($seq)-10)
    {
        $fprobe=substr($seq,$i,5);
        $pool=$PoolInd{substr($seq,$i+5,5)};
        $testOn{$fprobe}{$pool}=1; #To see if all are fully represented
    }
    $NumtestOn=0;
    foreach $prb (keys %testOn) { $NumtestOn += scalar (keys %{$testOn{$prb}}); }
    if ($seq eq $Seq)
    {
        $Found=1;
        $seq .= " True solution ";
    }
    if ($NumtestOn>=$NumOn)
    {
        push @Solutions, $seq;
        print "$seq DotsOn=$NumtestOn\n\n";
    }
}

```

```
print STDERR "done.\n",scalar @Solutions, " consistent solutions found";
if ($Found)
{
    print STDERR " including the true one.";
}
else {
    print STDERR " - TRUE not FOUND!!";
}
print "Solutions: ",scalar @Solutions," ";

sub new_signal
{
    my ($fp,$pool)=@_;
    my @Signal = ($fp,$pool);
    return \@Signal;
}
```

**APPENDIX 2**  
**Experimental Target Sequence r300 (SEQ ID NO:41)**

GTAGGGGTAG	ACATCGCGTA	AAAGGGGCGT	ACCCAGGACC	CCCCTTGGCT
CAATAAGTAG	CGCTGGGGTG	CTACTACGGG	TCTCGACACG	CATTCAACTA
AAAGCTTCCA	TTCGCACGGG	CTTATTTAAC	GAAGGTCGCG	ATAAGGTGCC
GAATAGGCTG	CAGAGCGGCA	GCCTGTCCAG	TGAATGCTGT	GAGGCCTCCA
GCTGACTCAT	GAGAGAAGCC	CAGTATTCAA	ACTACGATTC	CACTCGACAA
TTTAGGATGT	CTTCCCGAAA	GCTATCGGGT	AGAATATCAG	ATTCGTTTAA

### APPENDIX 3

#### D16 and DN16 Pools of Probes

#### D16

##### Group 0:64:

GATTT	CAGCT	GAAAA	TGGTT	AAAGT	CGCTC
AAGAT	CAAGC	TAACG	GCCTC	TGCAA	CAATG
AGAAC	TCAAA	ACTAT	TCAGT	GGGAA	TTCTA
TTGCT	GTAAG	GGTAC	TTAGA	TAGTC	CCACA
CTCTT	ATGAA	TCTGA	ACCGC	TACAC	CCTTA
AACAG	TGGGG	GCACC	GTGGC	GGCTG	GTCCA
TATGT	GGACT	AGCGA	TGATG	GATCA	TCCCG
TCTCC	GCGGG	GTCGT	CGCCG	ATTGG	GTATC
AGTTA	ATACT	CTTCC	CCCAG	GCCAT	TGTTC
GTTTG	CGTAG	TTTAT	AACCC	CCGAC	CAGGA
CTGCG	CGATA	ACGTG	AGGCA		

##### Group 1:64:

GTAAA	TCAGG	ACTCC	ATTAC	CCTGT	GCCCG
GGATG	CAACG	AATGG	TATCG	CTCAA	TGCCG
GAGGA	TAATC	CAAGT	TGCTA	ACCAA	TAGAA
GGCTC	TACGC	CGGGG	TTATA	CTCGG	CTACC
ATCTG	TTTAG	CATAC	CCCCT	GACAG	AGAGA
CCAGA	ACTTA	GCACA	GCTTG	TCCAC	CTGGC
CCGCA	AAACA	ATGTC	TGGGT	TCTTC	ATAGT
TGACC	TTGAT	AGCAT	GTTCA	CGTCA	ACATT
AGGTA	AAGCC	CGAAT	CGGAC	TCGTG	GGCGT
TGTGA	GGTGC	CAGTT	GCGGC	CACTA	GGTCT
GTATT	ATCCT	GCGAT	CTTTT		

##### Group 2:64:

TAGGG	GCGTC	GTTTC	AGATT	TGTGT	TTCGA
TAATT	CTGAC	GGGCG	CCAAT	CTAGT	ATTCC
TGCTG	GTCCG	TACCC	AGCAG	GTTCT	ACTCG
TTAAG	CCCGG	CGCCT	GATAG	TACAA	TCATA
CAGAG	TCCCT	CCTAA	GGAGA	CCACC	AGACC
CCGTT	TCTGC	CGATG	AGCGC	CGGTA	ACAGG
ATGGG	AAGTG	CATGT	GCATT	CAGTC	CTTTG
TTGTT	TGAAC	GAAGG	GGCAA	GACTA	ACGAC
ACCAT	CAACA	AATAC	GACGT	ATAAA	GTAGC
GAGGC	AAACT	CTCTC	GCTCA	CGTGC	ATCTA
GGGAT	TTGCA	ACGGA	AGTAA		

##### Group 3:64:

ACGGT	CGGCA	ATACG	CCTTC	AACGC	CGCGC
-------	-------	-------	-------	-------	-------

CGACG	CGGGT	GTGAA	AGCAA	CTAGA	TCGTA
GAACT	TGTGC	GCCCC	TTCTT	TGCCT	TCAAG
CCTGG	TAAGG	TCCTC	ATCAC	CACTT	ACGAG
GTTGT	TTAGC	CACAG	GCATA	AAATC	CTAAT
GCAGC	GAGAC	GGTAG	TGACA	AATAT	TATTC
TTGCG	GCTAT	TGGAT	GATGG	ATGTT	TACCA
ATTTG	TCTCG	CTTTA	ATTGA	CTCCC	AGGCC
GTCGG	GGTTA	AAGCG	ACTCA	TCCGT	AGCTG
CATCC	AGAGG	GAGTG	GTGTC	AAAAA	CCCAA
CGATT	CCGCT	TAGGA	TGGTG		

Group 4:64:

TAAAT	CGTAT	AAAAG	CAAGA	ACGAT	GAACA
TTCGC	AACGG	TATGA	ATCAA	TCCAA	CGCGT
CAGAA	AACCT	GCGCA	GAGGG	AATGT	ATGCC
CTGGT	GGGCT	GAGTT	AAGTA	CAGCC	TGTAC
CAATC	AGCTC	GCAAC	ATGGA	TAGCA	TCTCT
GCCGT	CTACG	CTTAC	GTTAG	CCTGC	CGTCG
TTCCG	TCGGG	GACAC	ACATG	GGCGA	AGACT
GGATA	GTCCT	ATAAC	CCATT	CACTG	GATTC
TACTA	CCCCA	ATTTC	GGGAG	CCGAG	CATCT
TGAGC	GGTCA	GTAGG	AGTGG	TCACC	CGCCC
GCTTT	TTATT	TGTTG	TTGTG		

Group 5:64:

GGGCC	TCTAG	ACCGA	GAAAT	CATAG	CCTGA
GTTAC	AACAA	TGCGC	CGGAA	AACTT	TAAAA
ATAAG	CGCTT	GCTCT	ACTGT	TCCAT	ATGAT
CTTCG	CTGGG	AATCG	CAGCA	TTCTG	GCTAA
TGGTA	CCCCG	CTATA	AGCGG	GAACG	CACGG
TGTAT	GCCGC	TACCT	TCGCC	TAGAC	GTGTT
AGATA	GACCC	TAGGT	AAGGC	ACACC	TTATC
TCATG	CCAAC	CTCAC	GCGTG	GTACA	GACGA
CCGTC	ATTTT	GATTA	CATTC	CTGCT	CGAGC
TGACT	AGTTC	GGAGT	CCAGT	AGGAC	GTCAG
GGTGG	ACGCG	ATCCC	TTTGA		

Group 6:64:

AAGGG	CATAT	GCCTA	GAAAC	TGATT	ACAGC
TCGTC	CAGAC	CCAAG	CGCAA	CAATA	CTCTG
CGGCG	AGGAG	AACGA	GGCCC	CTACT	ACGCC
CTCGC	GCGCG	TACCG	AGCAC	TGTAA	TGCGT
TTGAA	ATAGA	TTAGG	TAAAG	ACTAA	TTTAC
ATTGT	TATGC	AACTC	ACCAG	TAGCT	AGATG
TATTA	CATGG	CGTGT	GTCAT	AGTTT	AAAAT
CCGGT	TCGAT	ATTCT	GGACA	GGGTA	GAGGT
CGAAC	GCATC	GCTGA	GTGAG	CCTCA	TCACT
GACTT	GATCC	GTTGG	TTCCA	CGGGA	ACCCT
CCTTG	CTTTC	CTGTT	TGGGC		

Group 7:64:

TCCGG	CGGGC	AAAAC	GGAAG	GACAA	TGCAC
GTCTC	CAATT	AGTGT	GCAGT	GGCCG	GCGAA
CGTTC	TGGCA	AGTAG	TTAAT	CGACT	CTTCA
AACTG	ACTTT	ACGGC	CTAAC	CGTAA	GACCT
ACCCC	ATAGG	CTTAG	TACAG	TCGGT	CACGC
GATAC	CTCGT	CATTA	TGAGA	AGACG	GTGGG
CCGTG	GTATA	GATTG	GGTGA	TAGTT	GGGTC
ATGTA	TCTAC	CAGCG	TCACA	TAAGC	AAGGA
ATCAT	TTGCC	ATTCT	GTACC	TCCTA	TGTTT
CGGAT	TTATG	TATCT	AGCCA	ACATA	TCGAG
GCGCT	TTGGA	CCAGG	CCTCC		

Group 8:64:

TTTTC	GCCCA	ATATC	GGAAA	GTTGA	CAGTA
AGTCC	TGTCG	TCACG	ACCAC	CGATC	TGAAT
AAAGA	CGTTA	CACAT	CCTCT	GATGC	CTAAG
CTACA	TATAA	GCGAC	GGGGG	CTCGA	GGCGC
GTCTT	ATTAT	TAATG	AGGAT	AATCA	TCTGT
CACCC	AACCG	AATAG	CGGCT	GAGAG	GTGTA
CCGAA	GTTCT	ACGCT	CCGCG	GGTTT	AAATT
AGGTG	TCCTT	ATCGT	TTCAA	ACTTG	ATGGC
TCGGA	CCCTA	TAGCC	TGCCA	TTGGG	TATTT
GCATG	AGAAG	CGCAG	CAAGG	TGGAC	GAGCT
CCAGC	ACAAA	GCCGG	GTACT		



Group 9:64:

TAGTA	TATCC	GTAAC	ACGTT	TTTAA	CTTGT
ATACA	CACAA	AGGAA	ATAGC	TTACT	CACCT
CATCG	TTCGT	GCTTA	AACCA	CGCTG	TAGAG
CCCTT	GCCGA	AATTT	AGTCT	GCGCC	TCGCA
ATAAT	TAAAC	CTGTA	CGACC	TACGG	GGCGG
CCGGC	GATAT	CAGGT	CCAAA	TGGTC	TTCCC
ATCTC	AGGGC	GAATG	TGTCA	GTGAT	GGCCT
TTGGC	ATGCG	ACTGA	TCATT	GAAGT	GGGTT
GCCAC	ACTAC	TCTGG	ACCCG	CGTAC	CTCAG
AAAGG	CATGA	TTTTG	GACTC	GTTGC	TGCAT
GCTAG	GGACG	TGAGG	GTGGA		

Group 10:64:

CCACG	GCAGA	AACGT	GAGAT	GGGCA	CGTTG
CCGTA	TGATA	GCCTG	TCCGA	AAGCA	GAATA
ATTCA	CGAGG	TGGGA	GGCTT	TGAAG	TGTCC
CCCTC	GCTGT	TAACT	ATCAG	TTCCT	CTCTA
TTACC	GGAAC	TCGCG	GTTAA	ATGAC	GATCG
GCAAT	GTGCT	ACTAG	AGGGT	AGCCG	CGCCA
TTTGG	ATGTG	CTGCC	TCTTT	CATGC	AAATG
TCTCA	ACACA	AGTGA	AGTAT	GTCAC	ACATC
GACGC	GGTTC	ACCTT	TACTG	CTGGA	GACCA
AGAGC	ACGGG	CAAAA	GTACG	CGCAT	TCGAC
TATAT	CTATT	GAGTC	CCTAC		

Group 11:64:

GAACC	AGCCT	AACAT	CACGT	GGGGC	CTCCA
GCTCG	ACAAG	GTCTG	GGCTA	TGTAG	ATATT
TCGTT	CCACT	ACCTA	CTTAT	CGCAC	TAATA
TGGCG	TTCGG	TACTC	TTGTC	AGGTC	TCCCA
CCTTT	GTTCC	ATTTA	GCGGA	GGAAT	TTTCT
CAAAC	ATCGC	GAGCG	CTTGA	TCAAC	TTCAT
TGATC	AGAGT	ACCGG	CGAGA	GCTTC	CAGTG
TTAAA	TACGA	CCGCC	AAAGC	AGACA	GGTAA
CGTGG	GCCAG	CGGTT	GATGT	GCAGG	AATTG
TAGAT	AAGAA	CATCA	ATGCA	CTGAG	ATGGT
GTGAC	ACTGC	AGTAC	CTATG		

Group 12:64:

TGCTT	GAGCA	ATATG	TTACA	GGATC	ACACG
CTCAT	CTGTC	AGAAT	TATTG	CTGCA	GCAAA
ATTAA	TACGT	GCCCT	AAGAC	ACCCA	GTCTA
CTAAA	AGTCG	ACCTC	CGCGA	GGTAT	CGAGT
CCTAG	GTCCC	TTCAC	GTGCG	TGGCC	TCGCT
TTGAG	TCAAT	GATGA	AGCTA	GGCAC	CTTCT
GCGGT	ACGAA	ATCGG	CCGGG	TGGAA	TGTGG
CGTTT	AGGCT	GAAAG	GAAGC	AAATA	GGGTG
CACCG	TCAGC	CCATG	GCTCC	CTTGC	CACTC
AATCC	TCCAG	AAGTT	CATAA	CAACC	TCTTA
TGACG	CGGAG	GTAGT	ACAGA		

Group 13:64:

TTTGT	ATTAG	TAAGA	TCGAA	CGACA	ACTTC
AGAAA	GTAGA	AAGTC	CCTAT	GCGTA	CGTCC
ACCGT	TCTTG	GAATT	TCCCC	ATCCG	GCTGC
GTCAA	GATAA	GGTCG	TTCTC	TGGCT	AGGGG
GGGAC	CCATC	GTGGT	GTTTT	AACTA	TCGGC
AAACC	GGCCA	TGAGT	AATGA	CTCCT	GTGCC
CAGGC	TATAC	GACGG	AGGTT	AGCCC	TACAT
CAGAT	GCACG	GTGTG	GGCAT	CGCGG	TTTCA
CCCGA	AATCT	TGCAG	CTGAA	CGGTG	ACACT
CCCAC	TAGCG	CTAGG	CAAAG	TTAAC	ATTGC
GGAGC	ACCTG	TGTTA	ACGCA		

Group 14:64:

CGGTC	GCTGG	GTCGC	TTTCC	TTGTA	CACAC
GCGTT	ACAAC	CGTCT	ACTCT	CGAAA	AGTTG
CTTGG	AGCTT	ACGTA	AGTGC	TGGAG	AGTCA
CTCCG	TTAGT	GTAAT	TTACG	GGGGA	ACAGT
TCATC	ATCGA	CCCAT	CCCGC	GCAAG	TGCCC
TTCAG	GAAGA	AAACG	TAACA	CAAAT	ATGAG
AATAA	ATATA	TGCGA	GGCAG	GCTAC	CTATC
CCGGA	CACCA	GAGAA	TTTTT	CAGGG	GATCT
TACTT	GGTGT	CATTG	GGACC	GACTG	ATGCT
GAGCC	TATGG	TCCTG	TAGGC	AAGGT	AATTC
GTTTA	CTGAT	GGATT	TCTAA		

Group 15:64:

AATTA	TAGTG	TATAG	GGGGT	GGTCC	TGAAA
CTTAA	AAGCT	CCCTG	CTGTG	GCCTT	CGAAG
CCTCG	TATCA	TAACC	TTGGT	CATTT	CCATA
TAAGT	CGTGA	AGGGA	GTCGA	GGTTG	AGATC
TGTCT	ATCTT	GACAT	TCAGA	GGAGG	AAGAG
AGGCG	GTTAT	TGCGG	CCCGT	TTTCG	CACGA
GAATC	ATACC	CAACT	GCACT	TTGAC	ACTGG
GCCAA	CCGAT	TGCTC	GTGCA	GCGAG	GACCG
GAGTA	TTTTA	AGCGT	CGCTA	TCCGC	TCTAT
CGGCC	CTAGC	GTATG	ATCCA	AACAC	ACAAT
TTTGC	CCCCC	ACGTC	AATGC		

DN16

Group 0:64:

GATTT	CCTTT	GAAAA	TGGTT	AAAGT	CGCTC
AAGAT	CAAGC	TAACG	GCCTC	TGCAA	CAATG
AGAAC	TCAAA	ACTAT	TCAGT	GGGAA	TTCTA
TTGCT	GTAAG	GGTAC	TTAGA	TAGTC	CCACA
CTCTT	AACTT	TCTGA	ACCGC	TACAC	GACGA
AACAG	TGGGG	GCACC	GTGGC	GGCTG	GTCCA
TATGT	GGACT	AGCGA	TGATG	GATCA	TCCCC
TCTCC	GCGGG	GTCGT	CGCCG	ATTGG	GTATC
AGTTA	ATACT	CTTCC	CCCAG	CTTAT	TTGAG
GTTTG	CGTAG	CATGG	AACCC	CCGAC	CAGGA
CTGCG	CGATA	ACGTG	AGGCA		

Group 1:64:

GTAAA	TCAGG	ACTCC	AAAGC	CCTGT	GCCCC
GGATG	CAACG	AATGG	TATCG	CTCAA	TGCCG
GAGGA	TAATC	CAAGT	TGCTA	ACCAA	TAGAA
GGCTC	TACGC	CGGGG	TTATA	CTCGG	CTACC
ATCTG	TTTAG	CATAC	CCCCT	GACAG	AGAGA
CCAGA	ACTTA	GCACA	GCTTG	TCCAC	CTGGC
CCGCA	AAACA	ATGTC	TGGGT	TCTTC	ACCTT
TGACC	TTGAT	AGCAT	GTTCA	CGTCA	ACGAG
AGGTA	ATTGT	CGAAT	CGGAC	TCGTG	GGCGT
TGTGA	GGTGC	CAGTT	GCGGC	CACTA	GGTCT
GTATT	ATCCT	GCGAT	CTTTT		

Group 2:64:

TAGGG	GCGTC	GTTTC	TTGGC	CCCCA	TTCGA
TAATT	AGGTG	GGGCG	CCAAT	CTAGT	ATTCC
TGCTG	GTCCG	TACCC	AGCAG	GTTCT	ACTCG
TTAAG	CCCGG	CGCCT	GATAG	TACAA	TCATA
CAGAG	TCCCT	CCTAA	GGAGA	CCACC	AGACC
CCGTT	TCTGC	CGATG	AGCGC	CGGTA	ACAGG
TATCA	ATGAT	CATGT	GCATT	CAGTC	CTTTG
TTGTT	TGAAC	TTTAC	GGCAA	GACTA	ACGAC
ACCAT	CAACA	AATAC	GACGT	ATAAA	GTAGC
GAGGC	AAACT	CTCTC	GCTCA	CGTGC	ATCTA
GGGAT	TTGCA	ACGGA	AGTAA		

Group 3:64:

ACGGT	CGGCA	ATACG	CCTTC	AACGC	CGCGC
CGACG	CGGGT	GTGAA	AGCAA	CTAGA	TCGTA
GAACT	TGTGC	GCCCC	TTCTT	TGCCT	TCAAG
CCTGG	TAAGG	TCCTC	ATCAC	CACTT	ACATT
GTTGT	TTAGC	CACAG	GCATA	AAATC	CTAAT
GCAGC	GAGAC	GGTAG	TGACA	AATAT	TATTC
TTGCG	GCTAT	TGGAT	GATGG	ATGTT	TACCA
ATTTG	TCTCG	CTTTA	ATTGA	CTCCC	AGGCC
GTCGG	GGTTA	AAGCG	GGGCT	TCCGT	AGCTG
CATCC	AGAGG	GAGTG	GTGTC	AAAAA	CCCAA
CGATT	AGTAC	TAGGA	TGGTG		

Group 4:64:

TAAAT	CGTAT	AAAAG	CAAGA	ACGAT	GAACA
TTCGC	AACGG	TATGA	ATCAA	TCCAA	CGCGT
CAGAA	AACCT	GCGCA	GAGGG	AATGT	ATGCC
CTGGT	ACTCA	GAGTT	AAGTA	CAGCC	TGTAC
CAATC	AGCTC	GCAAC	ATGGA	TAGCA	TCTCT
GCCGT	CTACG	CTTAC	GTTAG	CCTGC	CGTCG
TTCCG	TCGGG	GACAC	ACATG	GGCGA	AGACT
GGATA	GTCCT	ATAAC	CCATT	CACTG	GATTC
CGCTA	CTTGA	ATTTT	GGGAG	CCGAG	CATCT
TGAGC	GGTCA	GTAGG	AGTGG	TCACC	CGCCC
GCTTT	TTATT	TGTTG	TTGTG		

Group 5:64:

GGGCC	TCTAG	ACCGA	GAAAT	CATAG	CCTCC
GTTAC	AACAA	TGCGC	CGGAA	ATGAA	TAAAA
ATAAG	CGCTT	ACGCA	ACTGT	TCCAT	AAGTG
CTTCG	CTGGG	AATCG	CAGCA	TTCTG	GCTAA
TGGTA	CCCCG	CTATA	AGCGG	GAACG	CACGG
TGTAT	GCCGC	TACCT	TACTA	TAGAC	GTGTT
AGATA	GACCC	TAGGT	AAGGC	ACACC	TTATC
TCATG	CCAAC	GTCGA	GCGTG	GTACA	CCTTA
CCGTC	ATTTT	GATTA	CATTC	CTGCT	CGAGC
TGACT	AGTTC	GGAGT	CCAGT	AGGAC	GTCAG
GGTGG	GATCT	ATCCC	TTTGA		

Group 6:64:

AGGCT	CATAT	GCCTA	GAAAC	TGATT	ACAGC
TCGTC	CAGAC	CCAAG	CGCAA	CAATA	CTCTG
CGGCG	GCCAG	AACGA	GGCCC	CTACT	ACTTC
CTCGC	GCGCG	TACCG	AGCAC	TGTAA	TGCGT
TTGAA	ATAGA	TTAGG	TAAAG	ACTAA	GAAGG
AAGCC	TATGC	TGTCG	CCCCC	TAGCT	AGATG
TATTA	TTTAT	CGTGT	GTCAT	AGTTT	AAAAT
CCGGT	TCGAT	ATTCT	GGACA	GGGTA	GAGGT
CGAAC	GCATC	GCTGA	GTGAG	CCTCA	TCACT
AGGAG	GATCC	GTTGG	TTCCA	CGGGA	ACCCT
CCTTG	CTTTC	CTGTT	TGGGC		

Group 7:64:

TCCGG	CGGGC	AAAAC	GGAAG	GACAA	TGCAC
GTCTC	CAATT	AGTGT	GCAGT	GGCCG	GCGAA
CGTTC	TGGCA	AGTAG	TTAAT	CGACT	CTTCA
AACTG	ACTTT	ACGGC	CTAAC	CGTAA	GACCT
ACCCC	ATAGG	CTTAG	TACAG	TCGGT	CACGC
GATAC	CTCGT	CATTA	TGAGA	AGACG	GTGGG
CCGTG	GTATA	GATTG	GGTGA	TAGTT	GGGTC
ATGTA	TCTAC	CAGCG	TCACA	TAAGC	AAGGA
ATCAT	TTGCC	ATTCT	GTACC	TCCTA	TGTTT
CGGAT	TTATG	TATCT	CCTGA	ACATA	TCGAG
GCGCT	TTGGA	CCAGG	AGCCA		

Group 8:64:

TTTTC	GCCCA	ATATC	GGAAA	GTTGA	CAGTA
AGTCC	CTGAC	TCACG	ACCAC	CGATC	TGAAT
AAAGA	CGTTA	CACAT	CCTCT	GATGC	CTAAG
CTACA	TATAA	GCGAC	GGGGG	CTCGA	GGCGC
GTCTT	ATTAT	TAATG	AGGAT	AATCA	TCTGT
CACCC	AACCG	AATAG	CGGCT	GAGAG	GTGTA
CCGAA	GTTCG	ACGCT	CCGCG	GGTTT	AAATT
AACTC	TCCTT	ATCGT	TTCAA	ACTTG	ATGGC
TCGGA	CCCTA	TAGCC	TGCCA	TTGGG	TATTT
GCATG	AGAAG	CGCAG	CAAGG	TGGAC	GAGCT
CCAGC	ACAAA	GCCGG	GTACT		

Group 9:64:

TAGTA	TATCC	GTAAC	ACGTT	TTTAA	CTTGT
ATACA	CACAA	AGGAA	ATAGC	TTACT	CACCT
CATCG	TTCGT	GCTTA	AACCA	CGCTG	TAGAG
CCCTT	GCCGA	AATTT	AGTCT	GCGCC	TCGCA
ATAAT	TAAAC	CTGTA	CGACC	TACGG	GGCGG
CCGGC	GATAT	CAGGT	CCAAA	TGGTC	TTCCC
ATCTC	AGGGC	GAATG	TGTCA	GTGAT	GGCCT
AGATT	ATGCG	ACTGA	TCATT	GAAGT	GGGTT
GCCAC	ACTAC	TCTGG	ACCCG	CGTAC	CTCAG
AAAGG	CATGA	TTTTG	GACTC	GTTGC	TGCAT
GCTAG	GGACG	TGAGG	GTGGA		

Group 10:64:

CCACG	GCAGA	AACGT	GAGAT	GGGCA	CGTTG
CCGTA	TGATA	GCCTG	TCCGA	AAGCA	GAATA
ATTCA	CGAGG	TGGGA	GGCTT	TGAAG	TGTCC
CCGCT	GCTGT	TAACT	ATCAG	TTCCT	CTCTA
TTACC	GGAAC	TGCGG	GTTAA	ATGAC	GATCG
GCAAT	GTGCT	ACTAG	AGGGT	AGCCG	CGCCA
TTTGG	ATGTG	CTGCC	TCTTT	CATGC	AAATG
TCTCA	ACACA	AGTGA	AGTAT	GTCAC	ACATC
GACGC	GGTTC	ATAGT	TACTG	CTGGA	GACCA
AGAGC	ACGGG	CAAAA	GTACG	CGCAT	TCGAC
TATAT	CTATT	GAGTC	CCTAC		

Group 11:64:

GAACC	AGCCT	AACAT	CACGT	GGGGC	CTCCA
GCTCG	ACAAG	GTCTG	GGCTA	TGTAG	ATATT
TCGTT	CCACT	GCCAT	ACCTA	CGCAC	TAATA
TGGCG	TTCGG	TACTC	TTGTC	AGGTC	TCCCA
CAGCT	GTTCC	ATTTA	GCGGA	GGAAT	TTTCT
CAAAC	ATCGC	GAGCG	TGTGT	TCAAC	TTCAT
TGATC	AGAGT	ACCGG	CGAGA	GCTTC	CAGTG
TTAAA	TACGA	CCGCC	ATTAC	AGACA	GGTAA
CGTGG	GACTT	CGGTT	GATGT	GCAGG	AATTG
TAGAT	AAGAA	CATCA	ATGCA	CCCTC	ATGGT
GTGAC	ACTGC	CTGAG	CTATG		

Group 12:64:

TGCTT	GAGCA	ATATG	TTACA	GGATC	ACACG
CTCAT	CTGTC	AGAAT	TATTG	TTTTT	GCAAA
ATTAA	TACGT	GCCCT	AAGAC	ACCCA	GTCTA
CTAAA	AGTCG	ACCTC	CGCGA	GGTAT	CGAGT
CCTAG	GTCCC	TTCAC	GTGCG	TGGCC	TCGCT
TGTTC	TCAAT	GATGA	AGCTA	GGCAC	CTTCT
GCGGT	ACGAA	ATCGG	CCGGG	TGGAA	TGTGG
CGTTT	AAGGG	GAAAG	GAAGC	AAATA	GGGTG
CACCG	TCAGC	CCATG	GCTCC	CTTGC	CACTC
AATCC	TCCAG	AAGTT	CATAA	CAACC	TCTTA
TGACG	CGGAG	GTAGT	ACAGA		

Group 13:64:

TTTGT	ATTAG	TAAGA	TCGAA	CGACA	ACGCC
AGAAA	GTAGA	AAGTC	CCTAT	GCGTA	CGTCC
ACCGT	TCTTG	GAATT	TCCCC	ATCCG	GCTGC
GTCAA	GATAA	GGTCG	TTCTC	TGGCT	AGGGG
GGGAC	CCATC	GTGGT	GTTTT	AACTA	TCGGC
AAACC	GGCCA	TGAGT	AATGA	CTCCT	GTGCC
CAGGC	TATAC	GACGG	AGGTT	AGCCC	TACAT
CAGAT	GCACG	GTGTG	GGCAT	CGCGG	TTTCA
CCCGA	AATCT	TGCAG	CTGAA	CGGTG	ACACT
CCCAC	TAGCG	CTAGG	CAAAG	TTAAC	ATTGC
GGAGC	ACCTG	TGTTA	GCTCT		

Group 14:64:

CGGTC	GCTGG	GTCGC	TTTCC	TTGTA	CACAC
GCGTT	ACAAC	CGTCT	ACTCT	CGAAA	AGTTG
CTTGG	AGCTT	ACGTA	AGTGC	TGGAG	AGTCA
CTCCG	TTAGT	GTAAT	TTACG	ACGCG	ACAGT
TCATC	ATCGA	CCCAT	CCCGC	GCAAG	TGCCC
TTCAG	GAAGA	AAACG	TAACA	CAAAT	ATGAG
AATAA	ATATA	TGCGA	GGCAG	GCTAC	CTATC
CCGGA	CACCA	GAGAA	CTGCA	CAGGG	GGGGA
TACTT	GGTGT	CATTG	GGACC	GACTG	ATGCT
GAGCC	TATGG	TCCTG	TAGGC	AAGGT	AATTC
GTTTA	CTGAT	GGATT	TCTAA		



Group 15:64:

AATTA	TAGTG	TATAG	GGGGT	GGTCC	TGAAA
CTTAA	AAGCT	CCCTG	CTGTG	GCCTT	CGAAG
CCTCG	ATGGG	TAACC	TTGGT	CATTT	CCATA
TAAGT	CGTGA	AGGGA	CTCAC	GGTTG	AGATC
TGTCT	ATCTT	GACAT	TCAGA	GGAGG	AAGAG
AGGCG	GTTAT	TGCGG	CCCGT	TTTCG	CACGA
GAATC	ATACC	CAACT	GCACT	TTGAC	ACTGG
GCCAA	CCGAT	TGCTC	GTGCA	GCGAG	GACCG
GAGTA	TCGCC	AGCGT	TTTTA	TCCGC	TCTAT
CGGCC	CTAGC	GTATG	ATCCA	AACAC	ACAAT
TTTGC	ACCAG	ACGTC	AATGC		

#### APPENDIX 4 Simulation Results

r300.0.0.out

Using pool D16

Using sequence r300

True Signal: fp=CTCGA pool=7  
True Signal: fp=CTACG pool=1  
True Signal: fp=CTACG pool=2  
True Signal: fp=GTACC pool=0  
True Signal: fp=ATCGC pool=1  
True Signal: fp=GAATG pool=15  
True Signal: fp=ATCGG pool=13  
True Signal: fp=GTCCG pool=13  
True Signal: fp=ACCCA pool=14  
True Signal: fp=CTGGG pool=10  
True Signal: fp=CAATT pool=3  
True Signal: fp=GACAA pool=1  
True Signal: fp=TACTA pool=3  
True Signal: fp=ACCCC pool=6  
True Signal: fp=AGACA pool=10  
True Signal: fp=TTCCA pool=8  
True Signal: fp=TTCCA pool=4  
True Signal: fp=ACGCA pool=8  
True Signal: fp=GACAC pool=2  
True Signal: fp=CGACA pool=10  
True Signal: fp=CGACA pool=11  
True Signal: fp=CTACT pool=10  
True Signal: fp=CCCCC pool=9  
True Signal: fp=CCCCC pool=14  
True Signal: fp=TTCCC pool=12  
True Signal: fp=GCCCC pool=1  
True Signal: fp=GAGAA pool=8  
True Signal: fp=CCAGC pool=5  
True Signal: fp=CAGAG pool=3  
True Signal: fp=GCAGA pool=1  
True Signal: fp=GCAGC pool=12  
True Signal: fp=CGCGA pool=3  
True Signal: fp=AGCGC pool=0  
True Signal: fp=GGACC pool=1  
True Signal: fp=CCAGG pool=7  
True Signal: fp=TTAGG pool=1  
True Signal: fp=GAGAG pool=1  
True Signal: fp=TAAAA pool=11  
True Signal: fp=AGCGG pool=4  
True Signal: fp=ACTAA pool=15  
True Signal: fp=CGGGC pool=4  
True Signal: fp=ACTAC pool=4  
True Signal: fp=ACTAC pool=7  
True Signal: fp=AGGGG pool=9

True Signal: fp=AGGGG pool=5  
 True Signal: fp=TTTAA pool=15  
 True Signal: fp=GGGGC pool=7  
 True Signal: fp=CAGAT pool=11  
 True Signal: fp=CATGA pool=14  
 True Signal: fp=AATGC pool=1  
 True Signal: fp=CCCCT pool=13  
 True Signal: fp=GACAT pool=4  
 True Signal: fp=TCTTC pool=8  
 True Signal: fp=CCAGT pool=10  
 True Signal: fp=CCAGT pool=9  
 True Signal: fp=GCTAC pool=9  
 True Signal: fp=TTTAG pool=11  
 True Signal: fp=TGAGA pool=12  
 True Signal: fp=TGCCG pool=8  
 True Signal: fp=GCGCT pool=15  
 True Signal: fp=CGCGT pool=4  
 True Signal: fp=TGAGG pool=7  
 True Signal: fp=TCGGG pool=1  
 True Signal: fp=CGGGT pool=8  
 True Signal: fp=CGGGT pool=12  
 True Signal: fp=GGCGT pool=12  
 True Signal: fp=TATCA pool=4  
 True Signal: fp=ATATC pool=2  
 True Signal: fp=CTATC pool=6  
 True Signal: fp=GGGGT pool=11  
 True Signal: fp=GGGGT pool=14  
 True Signal: fp=TATCG pool=3  
 True Signal: fp=GCTAT pool=3  
 True Signal: fp=GATGT pool=0  
 True Signal: fp=TGGCT pool=6  
 True Signal: fp=CTCAA pool=15  
 True Signal: fp=ATCAG pool=6  
 True Signal: fp=CGATA pool=8  
 True Signal: fp=CTGAC pool=5  
 True Signal: fp=GTATT pool=11  
 True Signal: fp=ATGAG pool=8  
 True Signal: fp=GCCTC pool=0  
 True Signal: fp=GTGAA pool=2  
 True Signal: fp=GCGTA pool=0  
 True Signal: fp=GCGTA pool=9  
 True Signal: fp=GCCTG pool=12  
 True Signal: fp=GGATG pool=1  
 True Signal: fp=GTGAG pool=0  
 True Signal: fp=TTAAC pool=2  
 True Signal: fp=AAAGC pool=1  
 True Signal: fp=AAAGC pool=6  
 True Signal: fp=AAGCC pool=8  
 True Signal: fp=CTCAT pool=8  
 True Signal: fp=AGATT pool=12  
 True Signal: fp=CAGCC pool=10  
 True Signal: fp=CGCAC pool=4

True Signal: fp=AAAGG pool=1  
True Signal: fp=GACCC pool=9  
True Signal: fp=CCCTT pool=1  
True Signal: fp=CGATT pool=11  
True Signal: fp=GAAGC pool=5  
True Signal: fp=TCATG pool=1  
True Signal: fp=AGGAC pool=15  
True Signal: fp=TGCTA pool=4  
True Signal: fp=GAAGG pool=10  
True Signal: fp=AATAA pool=2  
True Signal: fp=TGCTG pool=9  
True Signal: fp=GGCAG pool=1  
True Signal: fp=GAGCG pool=3  
True Signal: fp=CTTGG pool=1  
True Signal: fp=ACAAT pool=6  
True Signal: fp=ACTCA pool=7  
True Signal: fp=TCCAC pool=10  
True Signal: fp=AATAG pool=13  
True Signal: fp=GATAA pool=1  
True Signal: fp=TACGA pool=6  
True Signal: fp=TATTC pool=2  
True Signal: fp=CCTCC pool=3  
True Signal: fp=TAACG pool=14  
True Signal: fp=AAGCT pool=12  
True Signal: fp=AAGCT pool=5  
True Signal: fp=ACTCG pool=15  
True Signal: fp=CAGCT pool=9  
True Signal: fp=TCCAG pool=8  
True Signal: fp=TCCAG pool=2  
True Signal: fp=CGCAT pool=11  
True Signal: fp=TCGAC pool=9  
True Signal: fp=TCGAC pool=13  
True Signal: fp=GCTCA pool=5  
True Signal: fp=AGGAT pool=8  
True Signal: fp=TAGGA pool=15  
True Signal: fp=AGTGA pool=14  
True Signal: fp=TAGGC pool=13  
True Signal: fp=TACGG pool=7  
True Signal: fp=TAGGG pool=13  
True Signal: fp=AATAT pool=13  
True Signal: fp=GGTGC pool=1  
True Signal: fp=GGTGC pool=4  
True Signal: fp=TCCAT pool=9  
True Signal: fp=TGAAT pool=10  
True Signal: fp=TATTT pool=6  
True Signal: fp=TGTCC pool=10  
True Signal: fp=AACTA pool=11  
True Signal: fp=AACTA pool=3  
True Signal: fp=CACTC pool=7  
True Signal: fp=CTCCA pool=6  
True Signal: fp=AAGTA pool=7  
True Signal: fp=CAGTA pool=8

True Signal: fp=GACTC pool=14  
True Signal: fp=GTCCA pool=3  
True Signal: fp=CTGCA pool=11  
True Signal: fp=ATAGG pool=12  
True Signal: fp=GTAGA pool=8  
True Signal: fp=GTAGA pool=9  
True Signal: fp=TGTCT pool=0  
True Signal: fp=CAGTG pool=15  
True Signal: fp=GTAGC pool=14  
True Signal: fp=GTGCC pool=10  
True Signal: fp=CAAAC pool=11  
True Signal: fp=GTAGG pool=3  
True Signal: fp=AAAAG pool=0  
True Signal: fp=AAAAG pool=2  
True Signal: fp=ACACG pool=5  
True Signal: fp=GAAAG pool=14  
True Signal: fp=CCCGA pool=15  
True Signal: fp=AGCCC pool=10  
True Signal: fp=AGAGA pool=13  
True Signal: fp=ATGCT pool=6  
True Signal: fp=AGAGC pool=14  
True Signal: fp=GCTTA pool=9  
True Signal: fp=AGGCC pool=12  
True Signal: fp=CGGCA pool=10  
True Signal: fp=GCCGA pool=7  
True Signal: fp=CCTTG pool=2  
True Signal: fp=GCTTC pool=5  
True Signal: fp=TTCGC pool=10  
True Signal: fp=GCACG pool=10  
True Signal: fp=TTGGC pool=12  
True Signal: fp=GTGCT pool=9  
True Signal: fp=ACGGG pool=11  
True Signal: fp=ACGGG pool=3  
True Signal: fp=GCGGC pool=11  
True Signal: fp=TAGAA pool=15  
True Signal: fp=CCACT pool=13  
True Signal: fp=GGGCG pool=2  
True Signal: fp=TCAGA pool=9  
True Signal: fp=CGTAA pool=6  
True Signal: fp=TAGAC pool=11  
True Signal: fp=CTTAT pool=13  
True Signal: fp=AGCCT pool=0  
True Signal: fp=CGTAC pool=7  
True Signal: fp=CATCG pool=7  
True Signal: fp=TCGCA pool=7  
True Signal: fp=TCCCG pool=11  
True Signal: fp=AGTAG pool=9  
True Signal: fp=AGGCT pool=10  
True Signal: fp=GGCCT pool=8  
True Signal: fp=TCGCG pool=5  
True Signal: fp=GGTAG pool=10  
True Signal: fp=GGTAG pool=3

True Signal: fp=GGGCT pool=8  
True Signal: fp=TGGGG pool=1  
True Signal: fp=AGTAT pool=0  
True Signal: fp=ATGTC pool=9  
True Signal: fp=TGACT pool=9  
True Signal: fp=CTGTC pool=11  
True Signal: fp=GTCTC pool=4  
True Signal: fp=CTGTG pool=3  
True Signal: fp=CTAAA pool=14  
True Signal: fp=ACATC pool=13  
True Signal: fp=GTAAA pool=13  
True Signal: fp=ATAAG pool=13  
True Signal: fp=AGCTA pool=4  
True Signal: fp=GTCTT pool=13  
True Signal: fp=AGCTG pool=3  
True Signal: fp=AGGTC pool=1  
True Signal: fp=CGCTG pool=12  
True Signal: fp=GGCTC pool=14  
True Signal: fp=AGGTG pool=8  
True Signal: fp=GGGTA pool=10  
True Signal: fp=GGGTA pool=15  
True Signal: fp=GGCTG pool=2  
True Signal: fp=GGGTC pool=10  
True Signal: fp=CGAAA pool=3  
True Signal: fp=ATTCA pool=13  
True Signal: fp=ATTCA pool=6  
True Signal: fp=TTCAA pool=9  
True Signal: fp=TTCAA pool=12  
True Signal: fp=AACGA pool=11  
True Signal: fp=ACGAA pool=13  
True Signal: fp=ATTCC pool=2  
True Signal: fp=CCGAA pool=12  
True Signal: fp=CCGAA pool=14  
True Signal: fp=CATTC pool=13  
True Signal: fp=CCATT pool=11  
True Signal: fp=GGGTG pool=6  
True Signal: fp=AGAAG pool=0  
True Signal: fp=CCCAG pool=3  
True Signal: fp=CCCAG pool=5  
True Signal: fp=CACGC pool=10  
True Signal: fp=CTTCC pool=14  
True Signal: fp=CTTCC pool=6  
True Signal: fp=TTATT pool=0  
True Signal: fp=GATTC pool=12  
True Signal: fp=GATTC pool=14  
True Signal: fp=CAGGA pool=15  
True Signal: fp=GCATT pool=15  
True Signal: fp=AGCTT pool=4  
True Signal: fp=ATTCTG pool=9  
True Signal: fp=ATTCTG pool=5  
True Signal: fp=CGAAG pool=14  
True Signal: fp=CACGG pool=9

True Signal: fp=AAGGG pool=13  
 True Signal: fp=GAGGC pool=11  
 True Signal: fp=GGCTT pool=11  
 True Signal: fp=AAACT pool=4  
 True Signal: fp=TCAAA pool=4  
 True Signal: fp=TCAAC pool=5  
 True Signal: fp=CAACT pool=4  
 True Signal: fp=AGAAT pool=10  
 True Signal: fp=AATTT pool=8  
 True Signal: fp=TACCC pool=5  
 True Signal: fp=ACGAT pool=1  
 True Signal: fp=CGAAT pool=12  
 True Signal: fp=TAAGG pool=1  
 True Signal: fp=AAGGT pool=9  
 True Signal: fp=AAGGT pool=12  
 True Signal: fp=GCTGA pool=12  
 True Signal: fp=TGCAG pool=5  
 True Signal: fp=TAGCG pool=5  
 True Signal: fp=GCGAT pool=14  
 True Signal: fp=GCTGC pool=10  
 True Signal: fp=GCTGG pool=1  
 True Signal: fp=GGTCG pool=0  
 True Signal: fp=TCAAT pool=4  
 True Signal: fp=TAAGT pool=2  
 True Signal: fp=CCTGT pool=5  
 True Signal: fp=TCTCG pool=12  
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 True Signal: fp=CAATA pool=7  
 True Signal: fp=GAATA pool=0  
 True Signal: fp=GAATA pool=15  
 True Signal: fp=ATTTA pool=1  
 True Signal: fp=ATTTA pool=12

SEQ ID NO:42

GGTAGGGGTA GACATCGCGT AAAAGGGGCG TACCCAGGAC CCCCCTTGGC  
 TCAATAAGTA GCGCTGGGGT GCTACTACGG GTCTCGACAC GCATTCAACT  
 AAAAGCTTCC ATTCGCACGG GCTTATTTAA CGAAGGTCGC GATAAGGTGC  
 CGAATAGGCT GCAGAGCGGC AGCCTGTCCA GTGAATGCTG TGAGGCCTCC  
 AGCTGACTCA TGAGAGAAGC CCAGTATTCA AACTACGATT CCACTCGACA  
 ATTTAGGATG TCTTCCCGAA AGCTATCGGG TAGAATATCA GATTCGTTTA

DotsOn=286

SEQ ID NO:43

GGTAGGGGTA GACATCGCGT AAAAGGGGCG TACCCAGGAC CCCCTTGGC  
TCAATAAGTA GCGCTGGGGT GCTACTACGG GTCTCGACAC GCATTCAACT  
AAAAGCTTCC ATTCGCACGG GCTTATTAA CGAAGGTCGC GATAAGGTGC  
CGAATAGGCT GCAGAGCGGC AGCCTGTCCA GTGAATGCTG TGAGGCCTCC  
AGCTGACTCA TGAGAGAAGC CCAGTATTCA AACTACGATT CCACTCGACA  
ATTTAGGATG TCTTCCCGAA AGCTATCGGG TAGAATATCA GATTCGTTTG

DotsOn=286

SEQ ID NO:44

GGTAGGGGTA GACATCGCGT AAAAGGGGCG TACCCAGGAC CCCCTTGGC  
TCAATAAGTA GCGCTGGGGT GCTACTACGG GTCTCGACAC GCATTCAACT  
AAAAGCTTCC ATTCGCACGG GCTTATTAA CGAAGGTCGC GATAAGGTGC  
CGAATAGGCT GCAGAGCGGC AGCCTGTCCA GTGAATGCTG TGAGGCCTCC  
AGCTGACTCA TGAGAGAAGC CCAGTATTCA AACTACGATT CCACTCGACA  
ATTTAGGATG TCTTCCCGAA AGCTATCGGG TAGAATATCA GATTCGTTTT

DotsOn=286

SEQ ID NO:45

GTAGGGGTAG ACATCGCGTA AAAGGGGCGT ACCCAGGACC CCCCTTGGCT  
CAATAAGTAG CGCTGGGGTG CTACTACGGG TCTCGACACG CATTCAACTA  
AAAGCTTCCA TTCGCACGGG CTTATTAAAC GAAGGTCGCG ATAAGGTGCC  
GAATAGGCTG CAGAGCGGCA GCCTGTCCAG TGAATGCTGT GAGGCCTCCA  
GCTGACTCAT GAGAGAAGCC CAGTATTCAA ACTACGATTC CACTCGACAA  
TTTAGGATGT CTTCCCGAAA GCTATCGGGT AGAATATCAG ATTCGTTTAA

True solution DotsOn=286

SEQ ID NO:46

GTAGGGGTAG ACATCGCGTA AAAGGGGCGT ACCCAGGACC CCCCTTGGCT  
CAATAAGTAG CGCTGGGGTG CTACTACGGG TCTCGACACG CATTCAACTA  
AAAGCTTCCA TTCGCACGGG CTTATTAAAC GAAGGTCGCG ATAAGGTGCC  
GAATAGGCTG CAGAGCGGCA GCCTGTCCAG TGAATGCTGT GAGGCCTCCA  
GCTGACTCAT GAGAGAAGCC CAGTATTCAA ACTACGATTC CACTCGACAA  
TTTAGGATGT CTTCCCGAAA GCTATCGGGT AGAATATCAG ATTCGTTTTG

DotsOn=286

Solutions: 5



r300.100.0.out

Using pool D16

Using sequence r300

True Signal: fp=CTCGA pool=7  
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True Signal: fp=CTACG pool=2  
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True Signal: fp=ATCGG pool=13  
True Signal: fp=GTCGC pool=13  
True Signal: fp=ACCCA pool=14  
True Signal: fp=CTGGG pool=10  
True Signal: fp=CAATT pool=3  
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283mers:26  
284mers:25  
285mers:24  
286mers:22  
287mers:21  
288mers:19  
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291mers:15  
292mers:14  
293mers:12  
294mers:10

295mers:9  
296mers:8  
297mers:7  
298mers:6  
299mers:5  
300mers:3

SEQ ID NO:47

GTAGGGGTAG ACATCGCGTA AAAGGGGCGT ACCCAGGACC CCCCTTGGCT  
CAATAAGTAG CGCTGGGGTG CTACTACGGG TCTCGACACG CATTCAACTA  
AAAGCTTCCA TTCGCACGGG CTTATTTAAC GAAGGTCGCG ATAAGGTGCC  
GAATAGGCTG CAGAGCGGCA GCCTGTCCAG TGAATGCTGT GAGGCCTCCA  
GCTGACTCAT GAGAGAAGCC CAGTATTCAA ACTACGATTC CACTCGACAA  
TTTAGGATGT CTTCCCGAAA GCTATCGGGT AGAATATCAG ATTCGTTTAA

True solution DotsOn=286

SEQ ID NO:48

GCTAGGGGTA GACATCGCGT AAAAGGGGCG TACCCAGGAC CCCCCTTGGC  
TCAATAAGTA GCGCTGGGGT GCTACTACGG GTCTCGACAC GCATTCAACT  
AAAAGCTTCC ATTCGCACGG GCTTATTTAA CGAAGGTCGC GATAAGGTGC  
CGAATAGGCT GCAGAGCGGC AGCCTGTCCA GTGAATGCTG TGAGGCCTCC  
AGCTGACTCA TGAGAGAAGC CCAGTATTCA AACTACGATT CCACTCGACA  
ATTTAGGATG TCTTCCCGAA AGCTATCGGG TAGAATATCA GATTCGTTTA

DotsOn=286

Solutions: 2

**r300.300.0.out**

Using pool D16  
Using sequence r300

True Signal: fp=CTCGA pool=7  
True Signal: fp=CTACG pool=1  
True Signal: fp=CTACG pool=2  
True Signal: fp=GTACC pool=0  
True Signal: fp=ATCGC pool=1  
True Signal: fp=GAATG pool=15  
True Signal: fp=ATCGG pool=13  
True Signal: fp=GTCGC pool=13  
True Signal: fp=ACCCA pool=14  
True Signal: fp=CTGGG pool=10  
True Signal: fp=CAATT pool=3  
True Signal: fp=GACAA pool=1  
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True Signal: fp=ACCCC pool=6  
True Signal: fp=AGACA pool=10  
True Signal: fp=TTCCA pool=8  
True Signal: fp=TTCCA pool=4  
True Signal: fp=ACGCA pool=8

True Signal: fp=GACAC pool=2  
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True Signal: fp=GCAGA pool=1  
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True Signal: fp=CGCGA pool=3  
True Signal: fp=AGCGC pool=0  
True Signal: fp=GGACC pool=1  
True Signal: fp=CCAGG pool=7  
True Signal: fp=TTAGG pool=1  
True Signal: fp=GAGAG pool=1  
True Signal: fp=TAAAA pool=11  
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True Signal: fp=CGATA pool=8  
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 False positive Signal: fp=ATTGG pool=5  
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300mers:1

SEQ ID NO:49

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CAATAAGTAG CGCTGGGGTG CTACTACGGG TCTCGACACG CATTCAACTA  
AAAGCTTCCA TTCGCACGGG CTTATTTAAC GAAGGTCGCG ATAAGGTGCC  
GAATAGGCTG CAGAGCGGCA GCCTGTCCAG TGAATGCTGT GAGGCCTCCA  
GCTGACTCAT GAGAGAAGCC CAGTATTCAA ACTACGATTC CACTCGACAA  
TTTAGGATGT CTTCCCGAAA GCTATCGGGT AGAATATCAG ATTCGTTTAA

True solution DotsOn=286

Solutions: 1

**r300.100.15.out**

Using pool D16

Using sequence r300

True Signal: fp=CTCGA pool=7  
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False positive Signal: fp=CAGCC pool=14  
False positive Signal: fp=CGCGA pool=9  
False positive Signal: fp=CAGCC pool=8  
False positive Signal: fp=GGCTT pool=8  
False positive Signal: fp=GGTCG pool=0  
False positive Signal: fp=TATGA pool=14  
False positive Signal: fp=CCCGC pool=10

False positive Signal: fp=AGCCG pool=0  
False positive Signal: fp=CTAGC pool=10  
False positive Signal: fp=AGTCT pool=1  
False positive Signal: fp=GAGCT pool=7  
False positive Signal: fp=ACCAA pool=10  
False positive Signal: fp=GTCTT pool=3  
False positive Signal: fp=GGGCG pool=5  
False positive Signal: fp=GAGTT pool=1  
False positive Signal: fp=AATGC pool=13  
False positive Signal: fp=GAGGT pool=7  
False positive Signal: fp=TACTA pool=3  
False positive Signal: fp=TACTT pool=7  
False positive Signal: fp=CTCCA pool=5  
False positive Signal: fp=GATAA pool=0  
False positive Signal: fp=TGATAT pool=0  
False positive Signal: fp=GACCG pool=5  
False positive Signal: fp=TCTAT pool=11  
False positive Signal: fp=CTCTA pool=15  
False positive Signal: fp=TAACG pool=14  
False positive Signal: fp=TCTGC pool=6  
False positive Signal: fp=CCTCA pool=15  
False positive Signal: fp=GAGCT pool=2  
False positive Signal: fp=CGGCT pool=0  
False positive Signal: fp=GCCGA pool=9  
False positive Signal: fp=TAAAC pool=7  
False positive Signal: fp=TAGGT pool=8  
False positive Signal: fp=GGGAT pool=12  
False negative : fp= pool=  
False negative : fp=CTCGA pool=7  
False negative : fp=CTACG pool=1  
False negative : fp=CTACG pool=2  
False negative : fp=GTACC pool=0  
False negative : fp=ATCGC pool=1  
False negative : fp=GAATG pool=15  
False negative : fp=ATCGG pool=13  
False negative : fp=GTCGC pool=13  
False negative : fp=ACCCA pool=14  
False negative : fp=CTGGG pool=10  
False negative : fp=CAATT pool=3  
False negative : fp=GACAA pool=1  
False negative : fp=TACTA pool=3  
False negative : fp=ACCCC pool=6  
10mers:23488  
11mers:20478  
12mers:15215  
13mers:10346  
14mers:7890  
15mers:5945  
16mers:5080  
17mers:4433  
18mers:4074  
19mers:3825

20mers:3745  
21mers:3700  
22mers:3705  
23mers:3680  
24mers:3668  
25mers:3676  
26mers:3670  
27mers:3688  
28mers:3719  
29mers:3742  
30mers:3734  
31mers:3767  
32mers:3837  
33mers:3855  
34mers:3867  
35mers:3953  
36mers:3981  
37mers:3995  
38mers:4024  
39mers:4041  
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41mers:4039  
42mers:4085  
43mers:4135  
44mers:4217  
45mers:4386  
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47mers:4608  
48mers:4641  
49mers:4644  
50mers:4662  
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52mers:4786  
53mers:4845  
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61mers:5142  
62mers:5174  
63mers:5221  
64mers:5262  
65mers:5295  
66mers:5287  
67mers:5312  
68mers:5383  
69mers:5483  
70mers:5601  
71mers:5707



72mers:5814  
73mers:5885  
74mers:5954  
75mers:6047  
76mers:6110  
77mers:6127  
78mers:6109  
79mers:6137  
80mers:6176  
81mers:6186  
82mers:6242  
83mers:6311  
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86mers:6372  
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89mers:6507  
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94mers:6584  
95mers:6631  
96mers:6684  
97mers:6771  
98mers:6832  
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100mers:6841  
101mers:6887  
102mers:6853  
103mers:6867  
104mers:6882  
105mers:6897  
106mers:6957  
107mers:7050  
108mers:7186  
109mers:7307  
110mers:7360  
111mers:7470  
112mers:7521  
113mers:7502  
114mers:7556  
115mers:7560  
116mers:7605  
117mers:7619  
118mers:7587  
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120mers:7620  
121mers:7630  
122mers:7664  
123mers:7626

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126mers:7532  
127mers:7528  
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129mers:7419  
130mers:7372  
131mers:7363  
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133mers:7453  
134mers:7442  
135mers:7436  
136mers:7425  
137mers:7365  
138mers:7383  
139mers:7426  
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141mers:7487  
142mers:7491  
143mers:7446  
144mers:7414  
145mers:7405  
146mers:7429  
147mers:7434  
148mers:7497  
149mers:7558  
150mers:7550  
151mers:5291  
152mers:5258  
153mers:5165  
154mers:5051  
155mers:4937  
156mers:4850  
157mers:4858  
158mers:4844  
159mers:4796  
160mers:4755  
161mers:4666  
162mers:4602  
163mers:4557  
164mers:4509  
165mers:4503  
166mers:4487  
167mers:4478  
168mers:4466  
169mers:4432  
170mers:4407  
171mers:4389  
172mers:4342  
173mers:4332  
174mers:4266  
175mers:4166

176mers:4115  
177mers:4031  
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179mers:3857  
180mers:3758  
181mers:3718  
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183mers:3632  
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187mers:3434  
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190mers:3396  
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192mers:3340  
193mers:3271  
194mers:3218  
195mers:3200  
196mers:3130  
197mers:3091  
198mers:3067  
199mers:3020  
200mers:3013  
201mers:3011  
202mers:3032  
203mers:3015  
204mers:2876  
205mers:2800  
206mers:2757  
207mers:2733  
208mers:2740  
209mers:2680  
210mers:2610  
211mers:2558  
212mers:2511  
213mers:2513  
214mers:2473  
215mers:2397  
216mers:2317  
217mers:2208  
218mers:2143  
219mers:2141  
220mers:2118  
221mers:2114  
222mers:2144  
223mers:2121  
224mers:2104  
225mers:2077  
226mers:2077  
227mers:2029

228mers:1924  
229mers:1870  
230mers:1823  
231mers:1781  
232mers:1772  
233mers:1731  
234mers:1625  
235mers:1561  
236mers:1515  
237mers:1493  
238mers:1442  
239mers:1379  
240mers:1323  
241mers:1246  
242mers:1195  
243mers:1197  
244mers:1160  
245mers:1137  
246mers:1127  
247mers:1099  
248mers:1095  
249mers:1076  
250mers:1046  
251mers:991  
252mers:944  
253mers:916  
254mers:901  
255mers:881  
256mers:877  
257mers:862  
258mers:818  
259mers:789  
260mers:771  
261mers:754  
262mers:728  
263mers:698  
264mers:663  
265mers:610  
266mers:566  
267mers:555  
268mers:521  
269mers:474  
270mers:418  
271mers:367  
272mers:343  
273mers:326  
274mers:316  
275mers:294  
276mers:263  
277mers:236  
278mers:219  
279mers:214

280mers:218  
281mers:220  
282mers:218  
283mers:209  
284mers:199  
285mers:194  
286mers:196  
287mers:187  
288mers:174  
289mers:161  
290mers:139  
291mers:123  
292mers:114  
293mers:101  
294mers:79  
295mers:58  
296mers:47  
297mers:37  
298mers:27  
299mers:18  
300mers:11

SEQ ID NO:50

GGTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGC  
GCTGGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTTCGCACGGGCTT  
ATTTAACGAAGGTTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAAT  
GCTGTGAGGCCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACCTACGATTCCACTCGA  
CAATTTAGGATGTCTTCCCGAAAGCTATCGGGTAGAATATCAGATTTCGTTTT

DotsOn=286

SEQ ID NO:51

GTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGCG  
CTGGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTTCGCACGGGCTTA  
TTTAACGAAGGTTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAATG  
CTGTGAGGCCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACCTACGATTCCACTCGAC  
AATTTAGGATGTCTTCCCGAAAGCTATCGGGTAGAATATCAGATTTCGTTTTG

DotsOn=286

SEQ ID NO:52

GGGTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAG  
CGCTGGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTTCGCACGGGCT  
TATTTAACGAAGGTTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAA  
TGCTGTGAGGCCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACCTACGATTCCACTCG  
ACAATTTAGGATGTCTTCCCGAAAGCTATCGGGTAGAATATCAGATTTCGTTT

DotsOn=285

SEQ ID NO:53

GGTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGC  
GCTGGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTTCGCACGGGCTT

ATTTAACGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAAT  
GCTGTGAGGCCCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACCTACGATTCCACTCGA  
CAATTTAGGATGTCTTCCCGAAAGCTATCGGGTAGAATATCAGATTTCGTTTG

DotsOn=286

SEQ ID NO:54

GGGTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAG  
CGCTGGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTTCGCACGGGCT  
TATTTAACGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAA  
TGCTGTGAGGCCCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACCTACGATTCCACTCG  
ACAATTTAGGATGTCTTCCCGAAAGCTATCGGGTAGAATATCAGATTGTAGT

DotsOn=285

SEQ ID NO:55

GTTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGCG  
CTGGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTTCGCACGGGCTTA  
TTTAACGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAATG  
CTGTGAGGCCCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACCTACGATTCCACTCGAC  
AATTTAGGATGTCTTCCCGAAAGCTATCGGGTAGAATATCAGATTTCGTTTAA

True solution DotsOn=286

SEQ ID NO:56

GTTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGCG  
CTGGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTTCGCACGGGCTTA  
TTTAACGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAATG  
CTGTGAGGCCCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACCTACGATTCCACTCGAC  
AATTTAGGATGTCTTCCCGAAAGCTATCGGGTAGAATATCAGATTCCCATGT

DotsOn=284

SEQ ID NO:57

GGTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGC  
GCTGGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTTCGCACGGGCTT  
ATTTAACGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAAT  
GCTGTGAGGCCCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACCTACGATTCCACTCGA  
CAATTTAGGATGTCTTCCCGAAAGCTATCGGGTAGAATATCAGATTCCCATG

DotsOn=285

SEQ ID NO:58

GGGTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAG  
CGCTGGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTTCGCACGGGCT  
TATTTAACGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAA  
TGCTGTGAGGCCCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACCTACGATTCCACTCG  
ACAATTTAGGATGTCTTCCCGAAAGCTATCGGGTAGAATATCAGATTCCCAT

DotsOn=285

SEQ ID NO:59

GGTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGC  
GCTGGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTTCGCACGGGCTT  
ATTTAACGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAAT

GCTGTGAGGCCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACCTACGATTCCACTCGA  
CAATTTAGGATGTCTTCCCGAAAGCTATCGGGTAGAATATCAGATTCGTTTA  
DotsOn=286

SEQ ID NO:60

GTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGCG  
CTGGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTGCGACGGGCTTA  
TTTAACGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAATG  
CTGTGAGGCCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACCTACGATTCCACTCGAC  
AATTTAGGATGTCTTCCCGAAAGCTATCGGGTAGAATATCAGATTCGTTTGA  
DotsOn=285

Solutions: 11

## r300.0.0.DN16.out

Using pool DN16

Using sequence r300

True Signal: fp=CTCGA pool=7  
True Signal: fp=CTACG pool=1  
True Signal: fp=CTACG pool=2  
True Signal: fp=GTACC pool=0  
True Signal: fp=ATCGC pool=1  
True Signal: fp=GAATG pool=15  
True Signal: fp=ATCGG pool=13  
True Signal: fp=GTCGC pool=13  
True Signal: fp=ACCCA pool=14  
True Signal: fp=CTGGG pool=10  
True Signal: fp=CAATT pool=3  
True Signal: fp=GACAA pool=1  
True Signal: fp=TACTA pool=3  
True Signal: fp=ACCCC pool=6  
True Signal: fp=AGACA pool=10  
True Signal: fp=TTCCA pool=8  
True Signal: fp=TTCCA pool=4  
True Signal: fp=ACGCA pool=8  
True Signal: fp=GACAC pool=2  
True Signal: fp=CGACA pool=10  
True Signal: fp=CGACA pool=11  
True Signal: fp=CTACT pool=10  
True Signal: fp=CCCCC pool=2  
True Signal: fp=CCCCC pool=14  
True Signal: fp=TTCCC pool=12  
True Signal: fp=GCCCA pool=1  
True Signal: fp=GAGAA pool=8  
True Signal: fp=CCAGC pool=5  
True Signal: fp=CAGAG pool=3  
True Signal: fp=GCAGA pool=1  
True Signal: fp=GCAGC pool=12  
True Signal: fp=CGCGA pool=3  
True Signal: fp=AGCGC pool=0  
True Signal: fp=GGACC pool=1  
True Signal: fp=CCAGG pool=7  
True Signal: fp=TTAGG pool=1  
True Signal: fp=GAGAG pool=6  
True Signal: fp=TAAAA pool=11  
True Signal: fp=AGCGG pool=4  
True Signal: fp=ACTAA pool=15  
True Signal: fp=CGGGC pool=4  
True Signal: fp=ACTAC pool=4  
True Signal: fp=ACTAC pool=7  
True Signal: fp=AGGGG pool=9  
True Signal: fp=AGGGG pool=5  
True Signal: fp=TTTAA pool=15  
True Signal: fp=GGGGC pool=7



True Signal: fp=CAGAT pool=11  
True Signal: fp=CATGA pool=14  
True Signal: fp=AATGC pool=1  
True Signal: fp=CCCCT pool=13  
True Signal: fp=GACAT pool=4  
True Signal: fp=TCTTC pool=8  
True Signal: fp=CCAGT pool=10  
True Signal: fp=CCAGT pool=9  
True Signal: fp=GCTAC pool=9  
True Signal: fp=TTTAG pool=11  
True Signal: fp=TGAGA pool=12  
True Signal: fp=TGCCG pool=8  
True Signal: fp=GCGCT pool=15  
True Signal: fp=CGCGT pool=4  
True Signal: fp=TGAGG pool=5  
True Signal: fp=TCGGG pool=1  
True Signal: fp=CGGGT pool=8  
True Signal: fp=CGGGT pool=12  
True Signal: fp=GGCGT pool=12  
True Signal: fp=TATCA pool=4  
True Signal: fp=ATATC pool=9  
True Signal: fp=CTATC pool=6  
True Signal: fp=GGGGT pool=11  
True Signal: fp=GGGGT pool=14  
True Signal: fp=TATCG pool=3  
True Signal: fp=GCTAT pool=3  
True Signal: fp=GATGT pool=0  
True Signal: fp=TGGCT pool=6  
True Signal: fp=CTCAA pool=15  
True Signal: fp=ATCAG pool=6  
True Signal: fp=CGATA pool=2  
True Signal: fp=CTGAC pool=5  
True Signal: fp=GTATT pool=11  
True Signal: fp=ATGAG pool=8  
True Signal: fp=GCCTC pool=11  
True Signal: fp=GTGAA pool=2  
True Signal: fp=GCGTA pool=0  
True Signal: fp=GCGTA pool=9  
True Signal: fp=GCCTG pool=12  
True Signal: fp=GGATG pool=1  
True Signal: fp=GTGAG pool=0  
True Signal: fp=TTAAC pool=6  
True Signal: fp=AAAGC pool=1  
True Signal: fp=AAAGC pool=6  
True Signal: fp=AAGCC pool=8  
True Signal: fp=CTCAT pool=8  
True Signal: fp=AGATT pool=12  
True Signal: fp=CAGCC pool=10  
True Signal: fp=CGCAC pool=3  
True Signal: fp=AAAGG pool=1  
True Signal: fp=GACCC pool=9  
True Signal: fp=CCCTT pool=1

True Signal: fp=CGATT pool=11  
True Signal: fp=GAAGC pool=5  
True Signal: fp=TCATG pool=1  
True Signal: fp=AGGAC pool=6  
True Signal: fp=TGCTA pool=4  
True Signal: fp=GAAGG pool=10  
True Signal: fp=AATAA pool=2  
True Signal: fp=TGCTG pool=9  
True Signal: fp=GGCAG pool=1  
True Signal: fp=GAGCG pool=3  
True Signal: fp=CTTGG pool=1  
True Signal: fp=ACAAT pool=6  
True Signal: fp=ACTCA pool=7  
True Signal: fp=TCCAC pool=10  
True Signal: fp=AATAG pool=13  
True Signal: fp=GATAA pool=1  
True Signal: fp=TACGA pool=6  
True Signal: fp=TATTC pool=2  
True Signal: fp=CCTCC pool=3  
True Signal: fp=TAACG pool=14  
True Signal: fp=AAGCT pool=12  
True Signal: fp=AAGCT pool=5  
True Signal: fp=ACTCG pool=15  
True Signal: fp=CAGCT pool=9  
True Signal: fp=TCCAG pool=8  
True Signal: fp=CGCAT pool=11  
True Signal: fp=TCGAC pool=9  
True Signal: fp=TCGAC pool=5  
True Signal: fp=GCTCA pool=5  
True Signal: fp=AGGAT pool=8  
True Signal: fp=TAGGA pool=15  
True Signal: fp=AGTGA pool=14  
True Signal: fp=TAGGC pool=13  
True Signal: fp=TACGG pool=7  
True Signal: fp=TAGGG pool=13  
True Signal: fp=AATAT pool=13  
True Signal: fp=GGTGC pool=1  
True Signal: fp=GGTGC pool=5  
True Signal: fp=TCCAT pool=9  
True Signal: fp=TGAAT pool=10  
True Signal: fp=TATTT pool=6  
True Signal: fp=TGTCC pool=10  
True Signal: fp=AACTA pool=1  
True Signal: fp=AACTA pool=3  
True Signal: fp=CACTC pool=7  
True Signal: fp=CTCCA pool=6  
True Signal: fp=AAGTA pool=7  
True Signal: fp=CAGTA pool=8  
True Signal: fp=GACTC pool=14  
True Signal: fp=GTCCA pool=3  
True Signal: fp=CTGCA pool=11  
True Signal: fp=ATAGG pool=14

True Signal: fp=GTAGA pool=8  
 True Signal: fp=GTAGA pool=9  
 True Signal: fp=TGTCT pool=0  
 True Signal: fp=CAGTG pool=15  
 True Signal: fp=GTAGC pool=14  
 True Signal: fp=GTGCC pool=10  
 True Signal: fp=CAAAC pool=11  
 True Signal: fp=GTAGG pool=3  
 True Signal: fp=AAAAG pool=0  
 True Signal: fp=AAAAG pool=2  
 True Signal: fp=ACACG pool=5  
 True Signal: fp=GAAAG pool=14  
 True Signal: fp=CCCGA pool=15  
 True Signal: fp=AGCCC pool=10  
 True Signal: fp=AGAGA pool=13  
 True Signal: fp=ATGCT pool=6  
 True Signal: fp=AGAGC pool=14  
 True Signal: fp=GCTTA pool=9  
 True Signal: fp=AGGCC pool=12  
 True Signal: fp=CGGCA pool=10  
 True Signal: fp=GCCGA pool=7  
 True Signal: fp=CCTTG pool=2  
 True Signal: fp=GCTTC pool=5  
 True Signal: fp=TTCGC pool=10  
 True Signal: fp=GCACG pool=10  
 True Signal: fp=TTGGC pool=12  
 True Signal: fp=GTGCT pool=9  
 True Signal: fp=ACGGG pool=0  
 True Signal: fp=ACGGG pool=3  
 True Signal: fp=GCGGC pool=11  
 True Signal: fp=TAGAA pool=2  
 True Signal: fp=CCACT pool=13  
 True Signal: fp=GGGCG pool=2  
 True Signal: fp=TCAGA pool=9  
 True Signal: fp=CGTAA pool=12  
 True Signal: fp=TAGAC pool=11  
 True Signal: fp=CTTAT pool=13  
 True Signal: fp=AGCCT pool=0  
 True Signal: fp=CGTAC pool=7  
 True Signal: fp=CATCG pool=7  
 True Signal: fp=TCGCA pool=7  
 True Signal: fp=TCCCG pool=1  
 True Signal: fp=AGTAG pool=9  
 True Signal: fp=AGGCT pool=10  
 True Signal: fp=GGCCT pool=8  
 True Signal: fp=TCGCG pool=5  
 True Signal: fp=GGTAG pool=10  
 True Signal: fp=GGTAG pool=3  
 True Signal: fp=GGGCT pool=8  
 True Signal: fp=TGGGG pool=1  
 True Signal: fp=AGTAT pool=0  
 True Signal: fp=ATGTC pool=9

True Signal: fp=TGACT pool=9  
 True Signal: fp=CTGTC pool=11  
 True Signal: fp=GTCTC pool=4  
 True Signal: fp=CTGTG pool=3  
 True Signal: fp=CTAAA pool=14  
 True Signal: fp=ACATC pool=13  
 True Signal: fp=GTAAA pool=13  
 True Signal: fp=ATAAG pool=13  
 True Signal: fp=AGCTA pool=4  
 True Signal: fp=GTCTT pool=13  
 True Signal: fp=AGCTG pool=4  
 True Signal: fp=AGGTC pool=1  
 True Signal: fp=CGCTG pool=12  
 True Signal: fp=GGCTC pool=14  
 True Signal: fp=AGGTG pool=8  
 True Signal: fp=GGGTA pool=10  
 True Signal: fp=GGGTA pool=15  
 True Signal: fp=GGCTG pool=2  
 True Signal: fp=GGGTC pool=10  
 True Signal: fp=CGAAA pool=3  
 True Signal: fp=ATTCA pool=13  
 True Signal: fp=ATTCA pool=6  
 True Signal: fp=TTCAA pool=9  
 True Signal: fp=TTCAA pool=12  
 True Signal: fp=AACGA pool=11  
 True Signal: fp=ACGAA pool=13  
 True Signal: fp=ATTCC pool=2  
 True Signal: fp=CCGAA pool=12  
 True Signal: fp=CCGAA pool=14  
 True Signal: fp=CATTC pool=13  
 True Signal: fp=CCATT pool=11  
 True Signal: fp=GGGTG pool=6  
 True Signal: fp=AGAAG pool=0  
 True Signal: fp=CCCAG pool=3  
 True Signal: fp=CCCAG pool=5  
 True Signal: fp=CACGC pool=10  
 True Signal: fp=CTTCC pool=14  
 True Signal: fp=CTTCC pool=6  
 True Signal: fp=TTATT pool=0  
 True Signal: fp=GATTC pool=12  
 True Signal: fp=GATTC pool=14  
 True Signal: fp=CAGGA pool=6  
 True Signal: fp=GCATT pool=15  
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 True Signal: fp=GGTCG pool=0  
 True Signal: fp=TCAAT pool=4  
 True Signal: fp=TAAGT pool=2  
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299mers:3  
300mers:1

SEQ ID NO:61

GTAGGGGTAG	ACATCGCGTA	AAAGGGGCGT	ACCCAGGACC	CCCCTTGGCT
CAATAAGTAG	CGCTGGGGTG	CTACTACGGG	TCTCGACACG	CATTCAACTA
AAAGCTTCCA	TTCGCACGGG	CTTATTTAAC	GAAGGTCGCG	ATAAGGTGCC
GAATAGGCTG	CAGAGCGGCA	GCCTGTCCAG	TGAATGCTGT	GAGGCCTCCA
GCTGACTCAT	GAGAGAAGCC	CAGTATTCAA	ACTACGATTC	CACTCGACAA
TTTAGGATGT	CTTCCCGAAA	GCTATCGGGT	AGAATATCAG	ATTCGTTTAA

True solution DotsOn=285

Solutions: 1

r300.100.15.DN16.out

Using pool DN16

Using sequence r300

True Signal: fp=CTCGA pool=7  
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True Signal: fp=GAGAG pool=6  
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False positive Signal: fp=CACTC pool=10  
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False positive Signal: fp=GCCAC pool=7  
False positive Signal: fp=AAGAC pool=3  
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False positive Signal: fp=GTGGG pool=1  
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False positive Signal: fp=CCCAG pool=0  
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False negative : fp=CTCGA pool=7  
False negative : fp=CTACG pool=1  
False negative : fp=CTACG pool=2  
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False negative : fp=GAATG pool=15  
False negative : fp=ATCGG pool=13  
False negative : fp=GTCGC pool=13  
False negative : fp=ACCCA pool=14  
False negative : fp=CTGGG pool=10  
False negative : fp=CAATT pool=3  
False negative : fp=GACAA pool=1  
False negative : fp=TACTA pool=3  
False negative : fp=ACCCC pool=6  
10mers:23552  
11mers:20332  
12mers:15187  
13mers:10500  
14mers:8165  
15mers:6357  
16mers:5426  
17mers:4711  
18mers:4327  
19mers:4105  
20mers:4006

21mers:3949  
22mers:3895  
23mers:3800  
24mers:3721  
25mers:3650  
26mers:3611  
27mers:3627  
28mers:3613  
29mers:3613  
30mers:3605  
31mers:3596  
32mers:3619  
33mers:3656  
34mers:3673  
35mers:3700  
36mers:3714  
37mers:3768  
38mers:3822  
39mers:3838  
40mers:3845  
41mers:3856  
42mers:3920  
43mers:3982  
44mers:4015  
45mers:4080  
46mers:4132  
47mers:4109  
48mers:4126  
49mers:4098  
50mers:4084  
51mers:4096  
52mers:4131  
53mers:4180  
54mers:4257  
55mers:4320  
56mers:4384  
57mers:4486  
58mers:4532  
59mers:4565  
60mers:4567  
61mers:4624  
62mers:4729  
63mers:4873  
64mers:4994  
65mers:5081  
66mers:5141  
67mers:5169  
68mers:5191  
69mers:5220  
70mers:5299  
71mers:5427  
72mers:5558

73mers:5648  
74mers:5674  
75mers:5691  
76mers:5716  
77mers:5777  
78mers:5833  
79mers:5865  
80mers:5893  
81mers:5968  
82mers:6075  
83mers:6198  
84mers:6331  
85mers:6394  
86mers:6470  
87mers:6535  
88mers:6606  
89mers:6668  
90mers:6721  
91mers:6778  
92mers:6842  
93mers:6891  
94mers:6895  
95mers:6881  
96mers:6901  
97mers:6920  
98mers:6925  
99mers:6908  
100mers:6883  
101mers:4871  
102mers:4792  
103mers:4761  
104mers:4729  
105mers:4714  
106mers:4751  
107mers:4810  
108mers:4879  
109mers:4878  
110mers:4811  
111mers:4738  
112mers:4684  
113mers:4614  
114mers:4555  
115mers:4502  
116mers:4475  
117mers:4448  
118mers:4402  
119mers:4399  
120mers:4435  
121mers:4439  
122mers:4449  
123mers:4453  
124mers:4419

125mers:4380  
126mers:4363  
127mers:4304  
128mers:4243  
129mers:4166  
130mers:4087  
131mers:4068  
132mers:4041  
133mers:4003  
134mers:3959  
135mers:3906  
136mers:3859  
137mers:3802  
138mers:3743  
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164mers:3185  
165mers:3179  
166mers:3182  
167mers:3129  
168mers:3091  
169mers:3048  
170mers:3080  
171mers:3069  
172mers:3061  
173mers:3036  
174mers:3012  
175mers:2970  
176mers:2911

177mers:2912  
178mers:2891  
179mers:2925  
180mers:2945  
181mers:2992  
182mers:3019  
183mers:3002  
184mers:2973  
185mers:2965  
186mers:2973  
187mers:2981  
188mers:2955  
189mers:2899  
190mers:2836  
191mers:2756  
192mers:2707  
193mers:2673  
194mers:2646  
195mers:2628  
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201mers:2623  
202mers:2595  
203mers:2583  
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205mers:2505  
206mers:2524  
207mers:2527  
208mers:2555  
209mers:2523  
210mers:2487  
211mers:2431  
212mers:2364  
213mers:2307  
214mers:2263  
215mers:2227  
216mers:2168  
217mers:2123  
218mers:2077  
219mers:2065  
220mers:2035  
221mers:2020  
222mers:2034  
223mers:2038  
224mers:2026  
225mers:2000  
226mers:1975  
227mers:1943  
228mers:1879

229mers:1808  
230mers:1771  
231mers:1720  
232mers:1687  
233mers:1620  
234mers:1548  
235mers:1492  
236mers:1453  
237mers:1405  
238mers:1381  
239mers:1338  
240mers:1272  
241mers:1222  
242mers:1190  
243mers:1171  
244mers:1129  
245mers:1104  
246mers:1095  
247mers:1066  
248mers:1021  
249mers:996  
250mers:939  
251mers:896  
252mers:850  
253mers:795  
254mers:742  
255mers:679  
256mers:649  
257mers:631  
258mers:613  
259mers:602  
260mers:605  
261mers:600  
262mers:585  
263mers:568  
264mers:540  
265mers:509  
266mers:487  
267mers:472  
268mers:451  
269mers:418  
270mers:395  
271mers:365  
272mers:337  
273mers:319  
274mers:285  
275mers:266  
276mers:246  
277mers:223  
278mers:203  
279mers:194  
280mers:183



281mers:173  
282mers:173  
283mers:161  
284mers:145  
285mers:136  
286mers:135  
287mers:130  
288mers:123  
289mers:121  
290mers:105  
291mers:91  
292mers:84  
293mers:66  
294mers:53  
295mers:41  
296mers:31  
297mers:26  
298mers:21  
299mers:16  
300mers:10

SEQ ID NO:62

GTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGCG  
CTGGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTTCGCACGGGCTTA  
TTTAACGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAATG  
CTGTGAGGCCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACCTACGATTCCACTCGAC  
AATTTAGGATGTCTTCCCGAAAGCTATCGGGTAGAATATCAGATTCGTTTAA

True solution DotsOn=285

SEQ ID NO:63

GTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGCG  
CTGGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTTCGCACGGGCTTA  
TTTAACGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAATG  
CTGTGAGGCCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACCTACGATTCCACTCGAC  
AATTTAGGATGTCTTCCCGAAAGCTATCGGGTAGAATATCAGATTCATGT

DotsOn=283

SEQ ID NO:64

GGTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGC  
GCTGGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTTCGCACGGGCTT  
ATTTAACGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAAT  
GCTGTGAGGCCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACCTACGATTCCACTCGA  
CAATTTAGGATGTCTTCCCGAAAGCTATCGGGTAGAATATCAGATTCGTTTT

DotsOn=285

SEQ ID NO:65

GTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGCG  
CTGGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTTCGCACGGGCTTA

TTTAACGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAATG  
CTGTGAGGCCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACCTACGATTCCACTCGAC  
AATTTAGGATGTCTTCCCGAAAGCTATCGGGTAGAATATCAGATTTCGTTTTG

DotsOn=285

SEQ ID NO:66

GGTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGC  
GCTGGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTTCGCACGGGCTT  
ATTTAACGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAAT  
GCTGTGAGGCCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACCTACGATTCCACTCGA  
CAATTTAGGATGTCTTCCCGAAAGCTATCGGGTAGAATATCAGATTCCCATG

DotsOn=284

SEQ ID NO:67

GGGTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAG  
CGCTGGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTTCGCACGGGCT  
TATTTAACGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAA  
TGCTGTGAGGCCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACCTACGATTCCACTCG  
ACAATTTAGGATGTCTTCCCGAAAGCTATCGGGTAGAATATCAGATTTCGTTT

DotsOn=284

SEQ ID NO:68

GGTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGC  
GCTGGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTTCGCACGGGCTT  
ATTTAACGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAAT  
GCTGTGAGGCCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACCTACGATTCCACTCGA  
CAATTTAGGATGTCTTCCCGAAAGCTATCGGGTAGAATATCAGATTTCGTTTTG

DotsOn=285

SEQ ID NO:69

GGGTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAG  
CGCTGGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTTCGCACGGGCT  
TATTTAACGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAA  
TGCTGTGAGGCCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACCTACGATTCCACTCG  
ACAATTTAGGATGTCTTCCCGAAAGCTATCGGGTAGAATATCAGATTCCCAT

DotsOn=284

SEQ ID NO:70

GGTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGC  
GCTGGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTTCGCACGGGCTT  
ATTTAACGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAAT  
GCTGTGAGGCCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACCTACGATTCCACTCGA  
CAATTTAGGATGTCTTCCCGAAAGCTATCGGGTAGAATATCAGATTTCGTTA

DotsOn=285

SEQ ID NO:71

GTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGCG  
CTGGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTTCGCACGGGCTTA  
TTTAACGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAATG

CTGTGAGGCCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAAC TACGATTCCACTCGAC  
AATTTAGGATGTCTTCCCGAAAGCTATCGGGTAGAATATCAGATTGTTGA  
DotsOn=284

Solutions: 10